IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Lester F. LUDWIG

Serial No.: 10/680,591

Filed: October 6, 2003

Title: GENERALIZED ELECTRONIC MUSIC INTERFACE

Group Art Unit: 2837

Examiner: Marlon T. Fletcher

Confirmation No. 5264

Attorney Docket No.: 92039-8727 [2152-3023]

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REPLY BRIEF

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Sir:

Pursuant to 37 CFR § 41.41, this brief is responsive to the Examiner's Answer of July 21, 2008. The filing of this brief is believed timely since it is being filed within the non-extendable two-month time limit (September 21, 2008 falling on a Sunday) set out in 37 CFR § 41.41(a)(1). Accordingly, Appellant submits the following:

1. Overview

Appellant has carefully reviewed the various points set forth in the Examiner's Answer and has formulated the following observations.

- Appellant submits that it is not reasonable for the Examiner to interpret a computer server of a satellite system as a "musical instrument" simply because this satellite system component provides recorded music.
- The Examiner's position that "audio data" is the same as an "audio signal" fails because it: (1) contradicts the teachings of the cited Ishigaki patent; (2) contradicts the firmly established principles set out in the ATRAC and MPEG compression standards; and (3) lacks any support in the cited Ishigaki reference.
- Since the cited MUX 44 is an internal component of a digital satellite broadcasting equipment 1, it does not teach the claimed "outgoing multi-channel audio interface."
- The record remains deficient with regard to the rejection of independent claims 70, 96, 110, and 116 since the Examiner fails to provide the requisite support for such rejections.

Accordingly, Appellant submits that there remains a number of clear errors in the Examiner's rejections for which Appellant seeks review by the Board. Appellant will now address the various points raised by the Examiner.

2. Related appeals and interferences

The Examiner indicated that appeals in the following two applications are related to the present appeal:

09/400,926
10/676,926.

Appellant does not understand why the Examiner did not refer to four other appeals which were identified in the Appeal Brief. Regardless, Appellant has since updated this portion of the Appeal Brief by virtue of the Supplemental Appeal Brief filed on September 8, 2008. For the convenience of the Board, presented below is an accurate and complete list of appeals which are related to the present appeal. Each of these appeals has the same examiner as the present appeal.

Docket No.	App. Ser. No.:	App. filing date:	Appeal filed:
2152-3005	09/812,400	March 19, 2001	January 25, 2007
2152-3014	10/676,926	September 30, 2003	January 31, 2008
2152-3027	10/702,262	November 5, 2003	January 29, 2007 & March 12, 2008
2152-3026	10/703,023	November 5, 2003	July 25, 2006
2152-3030	10/702,415	November 6, 2003	August 8, 2008
2152-3044	11/040,163	January 21, 2005	January 31, 2008

3. Satellite broadcasting equipment is not a "musical instrument"

Claims 27-52, 70-86, 96-104, 110-114, and 116 stand rejected under 35 U.S.C. §103 (a) as being anticipated by Ishigaki et al. (U.S. 6,271,455).

Claim 27 recites "audio signals generated by an external musical instrument," and "wherein said MIDI control signals are generated by said external musical instrument." Appellant emphasizes that both the audio signals and the MIDI control signals are generated by the same element; namely an external musical instrument.

During prosecution, it was the Examiner's position that music piece source registering system 45 generates the claimed "audio signal" and MIDI data forming apparatus 41 generates the claimed "MIDI control signals." (Office Action of 11/01/07, pgs. 2 and 7). Appellant explained in the previously filed Appeal Brief that the so called audio signal and MIDI control signal of the cited Ishigaki patent is generated by two different entities (i.e., apparatus 41 and system 45), and thus, is distinguishable from the method recited in claim 1 which requires the audio signals and MIDI control signal to be generated by the same element (external musical instrument).

In the Examiner's Answer, the Examiner changes course and presents the notion that apparatus 41 and system 45 are part of music piece server 2, and that server 2 teaches the claimed "musical instrument." This is the first time the Examiner mentions server 2, thus representing a new ground of rejection. The Examiner reasoned that: "A musical instrument in its broadest term can be any instrument or device that generates music." (Examiner's Answer, pg. 9). The point of contention therefore boils down to whether music piece server 2 is a music instrument. Appellant submits that it is not, for at least the following reasons.

Fig. 1 of Ishigaki shows music piece server 2 as a component providing compressed music to a digital satellite broadcasting equipment 1, and is controlled via a data distribution control apparatus 3. (Ishigaki col. 4, lines 43-53). The data distribution control apparatus 3 functions according to a user request via public line 10. (Ishigaki col. 4, lines 53-55). Appellant fails to understand how a server that provides compressed data for satellite transmission is a musical instrument, as alleged by the Examiner. Appellant understands that the claims are to be interpreted broadly during examination; however the rules state that during "patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." (MPEP 2111) (emphasis added). Appellant submits that it is not reasonable for the Examiner to interpret a component of a satellite transmission system as a "musical instrument" simply because this component provides recorded music.

Appellant explores further the Examiner's reasoning on this point, and in particular, the position that: "A musical instrument in its broadest term can be any instrument or device that generates music." (Examiner's Answer, pg. 9). Using this unreasonably broad definition of a musical instrument, a vast number of devices would be considered a "musical instrument" simply by virtue of the device "generating music" (such as the providing of compressed music by server 2). The following is a very short list of components which would be deemed "musical instruments" using the Examiner's unduly broad definition.

- Radio in an automobile;
- Computer network components such as a modem, wired or optical cables, switches, routers, repeaters;
- TV program sound tracks;
- Cellular network infrastructure, such as base stations, transceivers, and master switch controllers, which enable song downloads;

Each of the forgoing components can generate or otherwise provide music, just as server 2 of Ishigaki provides music. It would be extreme for a car salesman to state that a car includes a musical instrument simply because it comes complete with a radio. It would be extreme to advertise that a computer router is a musical instrument merely because the router can provide or communicate music files. It is likewise extreme to interpret a server of a satellite transmission system as a "musical instrument" merely because server 2 can provide compressed music data.

Appellant submits that the Examiner's interpretation that server 2 teaches a "musical instrument" is not only unreasonably broad, but is wholly inconsistent with the meaning of this term as is understood by one of only ordinary skill in the field of the present application. Further, a review of the USPTO classification system for "music" (at http://www.uspto.gov/go/classification/uspc084/sched084.htm, *visited 09/19/08*) shows only elements that would be used for traditional and electronic musical instruments, not databases of music, nor karaoke machines, nor CD players, nor portable radios, nor radio stations, and so on. Accordingly, claim 27 is believed patentable over Ishigaki since server 2 does not teach the claimed "musical instrument."

4. Ishigaki does not teach "audio signals "

Claim 27 further recites "receiving instrument audio signals at an outgoing multi-channel audio interface, wherein said instrument audio signals comprise at least three independent audio signals generated by an external musical instrument."

Appellant's Appeal Brief set forth reasons why one of ordinary skill in the art easily understands that MPEG audio data (e.g., data from system 48) and ATRAC data (e.g., data from system 51) are not "audio signals." The Examiner replied to Appellant's position by stating that: "A signal carrying audio data is an audio signal." (Examiner's Answer pg. 9). Appellant will further demonstrate that the Examiner's contention as to the claimed "audio signals" element is misplaced and directly contradicts the well-established meaning of the "audio signal" term.

Consider first the MPEG audio data provided by system 48. Appellant first notes that Ishigaki describes "audio signals" not in the context of system 48, but rather with regard to MPEG audio encoder 46. (Ishigaki col. 5, lines 14-19). Ishigaki goes on to state that such audio signals are stored in MPEG audio server 47 as "audio data," which is packetized at system 48 for sending to multiplexer 44. (Ishigaki col. 5. lines 19-22). Ishigaki therefore describes both an "audio signal" and the completely different component of "audio data." These terms are not used interchangeably, as the Examiner has suggested. The reason is that an "audio signal" (the input of encoder 46) is completely different than "audio data" (output of server 47 and system 48).

Consider now the ATRAC data provided by system 51. Ishigaki describes "audio signals" not with regard to system 51, but instead with regard to ATRAC audio encoder 49. (Ishigaki col. 5, lines 14-19). Ishigaki goes further to state that such audio signals are stored in ATRAC audio server 50 as "audio data," which is packetized at system 51 for sending to multiplexer 44. (Ishigaki col. 5. lines 19-22). Ishigaki again describes separately the "audio signal" term and the "audio data" term. Appellant submits that the reason for this is because an "audio signal" (the input of encoder 49) is completely different than "audio data" (output of server 50 and system 51).

Further support for Appellant's position may be found in reference to descriptions of the ATRAC and MPEG audio compression encoding and decoding techniques. It is emphasized that these well-established compression methods do not describe the results of the encoding as "audio signals." Consider first the ATRAC compression method, an example of which may be found at http://www.minidisc.org/aes_atrac.html. The encoder output and decoder input are referred to as "quantized spectra" which are grouped into data structures called "Block Floating Units." Further, only the audio input to the encoder (see Section 3, first lines of the first and second paragraphs) and audio output of the decoder (see Section 4, last sentence) are referred to as "signals." Between the encoder and decoder, there exists only data, not signals.

A similar understanding is present in MPEG compression, the specifics of which are a well-established standard. See, for example, (http://74.125.45.104/search?q=cache:dAOnQ-MJr1QJ:en.wikipedia.org/wiki/MPEG-1_Audio_Layer_II+mpeg+audio+signal+data&hl=en&ct=clnk&cd=5&gl=us and http://74.125.45.104/search?q=cache:C0MAw2uNq7oJ:en.wikipedia.org/wiki/MP3+MP3+wiki+data+signal+audio&hl=en&ct=clnk&cd=2&gl=us. In the MPEG standard, only encoder input is referred to as an "audio signal" and the encoder output is a file, CD, or audio track of a video recording.

As a still further point, Appellant notes that the MPEG and ATRAC codecs introduce delay and losses. See, for example, http://en.wikipedia.org/wiki/List_of_codecs. Such functionality may be acceptable for retrieval of stored music data files, such as the case in Ishigaki. However, the use of such components for interconnecting electronic musical instruments and signal processing systems, as required by claim 27, would result in undesirable effects such as throwing off performer's timing, loss of nuance, etc.

The forgoing ATRAC and MPEG techniques firmly establish Appellant's position. Specifically, the output/input of MPEG system 48 and ATRAC audio system 51 at best includes "audio data," and most certainly does not include an "audio signal" as alleged by the Examiner. Accordingly, the Examiner's position that "audio data" is the same as an "audio signal" fails because it: (1) contradicts the teachings of the cited Ishigaki patent; (2) contradicts the firmly established principles set out in the ATRAC and MPEG compression standards; and (3) lacks any support in the cited Ishigaki reference.

5. No outgoing interface is taught

Claim 27 further recites "receiving instrument audio signals at an outgoing multi-channel audio interface." The Examiner alleges that this feature is taught by the MUX 44 component of the digital satellite broadcasting equipment 1. (Office Action of 11/1/07, pg. 2.) In the Examiner's Answer, the Examiner further alleged that MUX 44 has both an input and an output. (Examiner's Answer, pg. 9). Appellant interprets the Examiner's comments as meaning that the output from multiplexer 44 teaches the claimed "outgoing multi-channel audio interface."

As a first point, just because a component has an output does not make this component an interface. In the present appeal, MUX 44 functions as a multiplexer for MDI data packets, MPEG audio packets, ATRAC audio packets, and MPEG2 data packets. (Ishigaki Fig. 2). Ishigaki is silent as to functioning as an interface, and instead is shown providing output to the radio wave transmitting system 59.

As a second point, Appellant emphasizes that system 59 and MUX 44 are internal components of a larger system; namely digital satellite broadcasting equipment 1. (Ishigaki Fig. 2). Assuming *arguendo* that MUX 44 discloses an interface, Ishigaki would at best disclose MUX 44 as an internal interface. This is completely distinguishable from claim 27 which recites "an outgoing multi-channel audio interface." MUX 44 is not an "outgoing" interface since it is buried within the satellite broadcasting equipment 1. There is no teaching or suggestion that MUX 44 provides an outgoing interface, much less the claimed "outgoing multi-channel audio interface." In view of the forgoing, Ishigaki fails to teach or suggest a number of features recited in independent claim 27, representing clear error with the position set forth by the Examiner.

6. Independent claims 70, 96, 110, and 116

Appellant's Appeal Brief noted that with regard to independent claims 70, 96, 110, and 116 the Examiner failed to provide any basis for the stated rejection to these claims.

In response, the Examiner appeared to address a mere two features recited in only two of these claims (claims 110 and 116). Appellant acknowledges the Examiner's efforts. However, notwithstanding these efforts, the fact remains that the Examiner has failed to provide detailed comments as to the rejection to the forgoing claims in a manner which is consistent with MPEP § 707. The Examiner's comments as to the first and second electronic music system is a start for claims 110 and 116, but the record remains unclear as to how Ishigaki is being applied to reject these and the other independent claims. Appellant looks forward to distinguishing the Ishigaki patent from the claims of the present application, but is unable to do so since the Examiner's position has still not yet been established.

7. Claims currently in condition for allowance

Appellant submits for the reasons set out in both Appellant's Appeal Brief and this Reply Brief, the rejections are improper and that all of the claims pending in the present application are allowable over the asserted references. Appellant respectfully requests that the Board of Patent Appeals and Interferences reverse the decision rejecting the pending independent claims (claims 27, 70, 96, 110, and 116), allow all dependents by virtue of the allowance of their parent, and subsequently direct the Examiner to pass the case to issue.

Respectfully submitted,

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